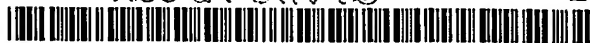


(19) World Intellectual Property
Organization
International Bureau



Rec'd PCT/PTO 18 JAN 2005



(43) International Publication Date
22 January 2004 (22.01.2004)

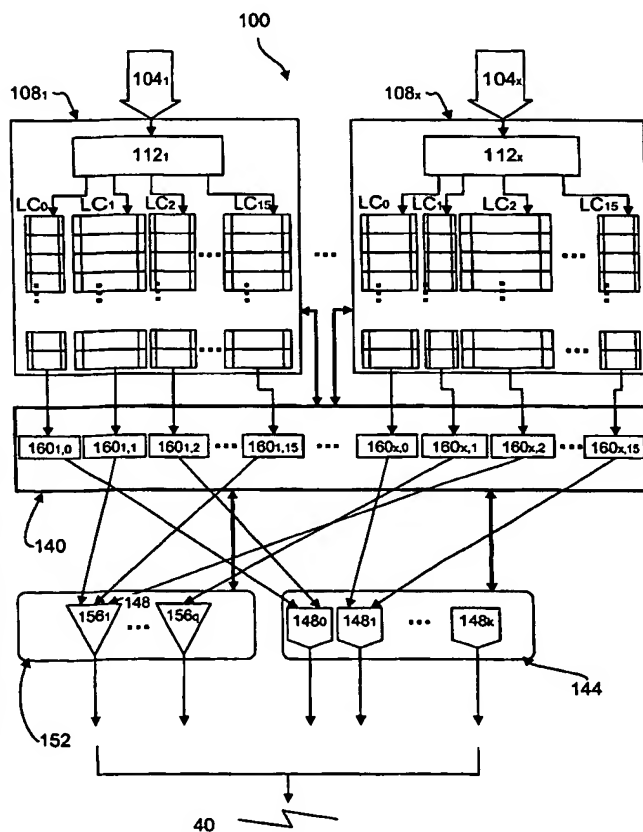
PCT

(10) International Publication Number
WO 2004/008698 A3

- (51) International Patent Classification⁷: H04L 12/56
- (21) International Application Number:
PCT/CA2003/001043
- (22) International Filing Date: 11 July 2003 (11.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2,393,373 15 July 2002 (15.07.2002) CA
- (71) Applicant (for all designated States except US): SOMA NETWORKS, INC [US/US]; 185 Berry Street, Suite 2000, San Francisco, CA 94107 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): GERKIS, Anthony [CA/CA]; Soma Networks, 312 Adelaide St. West, Suite 700, Toronto, Ontario M5V 1R2 (CA).
- (74) Agents: STRATTON, Robert, P. et al.; Soma Networks, 312 Adelaide St. West, Suite 700, Toronto, Ontario M5V 1R2 (CA).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: APPARATUS, SYSTEM AND METHOD FOR THE TRANSMISSION OF DATA WITH DIFFERENT QOS ATTRIBUTES



(57) Abstract: A novel apparatus, system and method for transmitting data flows having different quality of service (QoS) attributes over a network link structured in two or more channels is provided. The method classifies arriving packets to determine their required/assigned QoS attributes and places the classified packets into one of several logical channel queues, the selected logical channel queue having an appropriate corresponding set of QoS attributes defined. A radio link controller examines the available channels and, for each channel, selects a logical channel queue whose contents will be transmitted thereon. The radio link controller determines the data transmission capacity for each channel and segments the contents of the selected logical channel to fit within the determined capacity. The selection of the logical channel queue is performed in accordance with the set of QoS attributes and thus each flow can have different QoS characteristics including priorities, reliabilities (ARQ, no ARQ, etc.).

WO 2004/008698 A3



Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
15 April 2004

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01043

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L12/56

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A A	<p>US 2002/032788 A1 (EMANUEL FRANK ET AL) 14 March 2002 (2002-03-14) abstract; claims 1,6,10,12; figures 1,5,6</p> <p>paragraphs '0002!', '0003!', '0005!', '0007!'-'0009!', '0035!', '0041!'-'0043!', '0048!', '0049!', '0056!', '0057!'</p> <p>--- WO 02 01758 A (MOTOROLA INC) 3 January 2002 (2002-01-03) page 3, line 7 -page 4, line 14 page 10, line 26 -page 11, line 16 claims 1,4,7-9; figures 1,3</p> <p>--- -/-</p>	<p>1,9,11, 14-18 2-8,10, 12,13,19</p> <p>1,14</p>

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the International search

11 February 2004

Date of mailing of the International search report

18/02/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Matos, N

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01043

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 01 78441 A (NOKIA NETWORKS OY ;KEKKI SAMI (FI)) 18 October 2001 (2001-10-18) page 6, line 21 - line 28 page 7, line 23 -page 8, line 10 claims 1,4,6,17-28,33,37,38; figures 1,2,4</p> <p style="text-align: center;">---</p>	1,14
A	<p>MARCHENT B G ET AL: "Support of mobile multimedia over radio for a wide range of QoS and traffic profiles" IEEE INTERNATIONAL CONFERENCE ON PERSONAL WIRELESS COMMUNICATIONS PROCEEDINGS, XX, XX, 1999, pages 145-149, XP002157228 the whole document</p> <p style="text-align: center;">-----</p>	1,14

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/CA 03/01043

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002032788	A1	14-03-2002	EP 1168753 A1	02-01-2002
			AU 5178101 A	03-01-2002
			CN 1330359 A	09-01-2002
			JP 2002044151 A	08-02-2002
WO 0201758	A	03-01-2002	US 6597919 B1	22-07-2003
			AU 5578601 A	08-01-2002
			WO 0201758 A1	03-01-2002
WO 0178441	A	18-10-2001	AU 5225801 A	23-10-2001
			CN 1429466 T	09-07-2003
			WO 0178441 A1	18-10-2001
			EP 1273202 A1	08-01-2003
			JP 2003530797 T	14-10-2003
			US 2003161325 A1	28-08-2003